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Mopeds — Positioning of lighting and light-signalling devices

*Cyclomoteurs — Position des dispositifs d'éclairage et de signalisation
lumineuse*



Reference number
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Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 10355 was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 23, *Mopeds*.

This second edition cancels and replaces the first edition (ISO 10355:1994), which has been technically revised.

Mopeds — Positioning of lighting and light-signalling devices

1 Scope

This International Standard specifies the requirements for the positioning of lighting and light-signalling devices when fitted to a moped, as defined in ISO 3833. It does not specify the installation of any of these devices.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 3833, *Road vehicles — Types — Terms and definitions*

ISO 6726, *Mopeds and motorcycles with two wheels — Masses — Vocabulary*

ISO 7227:1987, *Road vehicles — Lighting and light signalling devices — Vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 6726 and ISO 7227 and the following apply.

3.1

transverse plane

vertical plane perpendicular to the median longitudinal plane of the vehicle

3.2

front position lamp

lamp used to indicate the presence of the vehicle when it is viewed from the front

NOTE Adapted from ISO 7227:1987.

3.3

rear position lamp

lamp used to indicate the presence of the vehicle when it is viewed from the rear

NOTE Adapted from ISO 7227:1987.

3.4

illuminating surface of reflex-reflecting device

illuminating surface of a reflex-reflecting device in a plane perpendicular to the reference axis and bounded by planes on the outer edges of the reflex-reflecting device light projection surface and parallel to this axis

NOTE Adapted from ISO 7227:1987.

3.5 separation distance
distance separating two lamps facing in the same direction, between the orthogonal projections in a plane perpendicular to the reference axes of the outlines of the two illuminating surfaces

NOTE For the full terms and definitions of the illuminating surfaces concerned, see ISO 7227:1987, 3.35 and 3.36.

4 General requirements

4.1 For all light-signalling devices, including those mounted on the side, the reference axis of the lamp when fitted to the vehicle shall be parallel to the bearing plane of the vehicle on the road. In addition, it shall be perpendicular to the longitudinal median plane of the vehicle in the case of side reflex-reflecting devices, and parallel to that plane in the case of all other devices.

A tolerance of $\pm 3^\circ$ is allowed in each direction.

In addition, if specifications for fitting are provided by the manufacturer, they shall be met.

4.2 In the absence of specific instructions, the height and orientation of the lamp shall be verified with the vehicle unladen and placed on a flat horizontal surface, with its median longitudinal plane vertical and the handlebars in the position corresponding to straight ahead.

4.3 In the absence of specific instructions, lamps constituting a pair and having the same function shall

- a) be mounted symmetrically in relation to the median longitudinal plane, and
- b) be symmetrical to one another in relation to the median longitudinal plane.

4.4 In the absence of specific instructions, lamps having different functions may be independent, or grouped, combined or incorporated in one device, on condition that each lamp satisfies the specific requirements applicable to it.

4.5 The maximum height above ground shall be measured from the highest point and the minimum height from the lowest point of the illuminating surface.

4.6 This International Standard defines the positions of the following lighting and light-signalling devices:

- driving/main-beam headlamp (see 5.1);
- passing/dipped-beam headlamp (see 5.2);
- front position lamp (see 5.3);
- front reflex-reflecting device (see 5.4);
- side reflex-reflecting device (see 5.5);
- pedal reflex-reflecting device (see 5.6);
- rear reflex-reflecting device (see 5.7);
- direction indicator lamp (see 5.8);
- stop lamp (see 5.9);
- rear position lamp (see 5.10).

4.7 If fitted, the positioning of each of the lighting and light-signalling devices given in 4.6 shall be effected in conformity with the relevant requirements given in each subclause.

5 Specific requirements

5.1 Driving/main-beam headlamp

5.1.1 Position

5.1.1.1 A driving/main-beam headlamp may be either independent or reciprocally incorporated with another front lamp.

5.1.1.2 In the case of a moped equipped with an independent driving/main-beam headlamp, it may be fitted either above or below, or on either side of another front lamp.

If these lamps are one above the other, the reference centre of the driving/main-beam headlamp shall be located in the median longitudinal plane of the vehicle.

If these lamps are side by side, their reference centres shall be symmetrical in relation to the median longitudinal plane of the vehicle.

5.1.1.3 In the case of a moped equipped with a driving/main-beam headlamp that is reciprocally incorporated with another front lamp, it shall be fitted in such a way that its reference centre lies in the median longitudinal plane of the vehicle.

However, when the vehicle is also fitted with an independent passing/dipped-beam headlamp or a passing/dipped-beam headlamp that is reciprocally incorporated with a front position lamp alongside the driving/main-beam headlamp, their reference centres shall be symmetrical in relation to the median longitudinal plane of the vehicle.

5.1.1.4 In the case of a moped equipped with two driving/main-beam headlamps of which either one or both are reciprocally incorporated with another front lamp, they shall be fitted in such a way that their reference centres are symmetrical in relation to the median longitudinal plane of the vehicle.

5.1.1.5 In all cases, the separation distance between any two headlamps shall be not more than 200 mm.

5.1.2 Orientation

The driving/main-beam headlamps shall face forward. The lamp may move with the steering.

5.2 Passing/dipped-beam headlamp

5.2.1 Position

5.2.1.1 A passing/dipped-beam headlamp may be either independent or reciprocally incorporated with another front lamp.

5.2.1.2 In the case of a moped equipped with an independent passing/dipped-beam headlamp, it may be fitted either above or below, or on either side of another front lamp.

If these lamps are one above the other, the reference centre of the passing/dipped-beam headlamp shall be located in the median longitudinal plane of the vehicle.

If these lamps are side by side, their reference centres shall be symmetrical in relation to the median longitudinal plane of the vehicle.

5.2.1.3 In the case of a moped equipped with a passing/dipped-beam headlamp that is reciprocally incorporated with another front lamp, it shall be fitted in such a way that its reference centre lies in the median longitudinal plane of the vehicle.

However, when the vehicle is also fitted with an independent driving/main-beam headlamp or a driving/main-beam headlamp that is reciprocally incorporated with a front position lamp alongside the passing/dipped-beam headlamp, their reference centres shall be symmetrical in relation to the median longitudinal plane of the vehicle.

5.2.1.4 In the case of a moped equipped with two passing/dipped-beam headlamps of which either one or both are reciprocally incorporated with another front lamp, they shall be fitted in such a way that their reference centres are symmetrical in relation to the median longitudinal plane of the vehicle.

5.2.1.5 In all cases, the separation distance between any two headlamps shall be not more than 200 mm.

5.2.1.6 The height of a passing/dipped-beam headlamp shall be not less than 500 mm nor more than 1 200 mm above the ground.

5.2.2 Orientation

The passing/dipped-beam headlamp shall face forward. The lamp may move with the steering.

5.3 Front position lamp

5.3.1 Position

5.3.1.1 A front position lamp may be either independent or reciprocally incorporated with another front lamp.

5.3.1.2 In the case of a moped equipped with an independent front position lamp, it may be fitted either above or below, or on either side of another front lamp.

If these lamps are one above the other, the reference centre of the front position lamp shall be located in the median longitudinal plane of the vehicle.

If these lamps are side by side, their reference centres shall be symmetrical in relation to the median longitudinal plane of the vehicle.

5.3.1.3 In the case of a moped equipped with a front position lamp that is reciprocally incorporated with another front lamp, it shall be fitted in such a way that its reference centre lies in the median longitudinal plane of the vehicle.

However, when the vehicle is also fitted with another front lamp alongside the front position lamp, their reference centres shall be symmetrical in relation to the median longitudinal plane of the vehicle.

5.3.1.4 In the case of a moped equipped with two front position lamps of which either one or both are reciprocally incorporated with another front lamp, they shall be fitted in such a way that their reference centres are symmetrical in relation to the median longitudinal plane of the vehicle.

5.3.1.5 The height of a front position lamp shall be not less than 350 mm nor more than 1 200 mm above the ground.

5.3.2 Orientation

The front position lamp shall face forward. The lamp may move with the steering.

5.4 Front reflex-reflecting device

5.4.1 Position

5.4.1.1 In width, the reference centre shall be in the median longitudinal plane of the vehicle.

5.4.1.2 In height, it shall be not less than 400 mm nor more than 1 200 mm above the ground.

5.4.2 Orientation

The front reflex-reflecting device shall face forward. It may move with the steering.

5.5 Side reflex-reflecting device

5.5.1 Position

5.5.1.1 For width, there is no specific requirement.

5.5.1.2 The height of a side reflex-reflecting device shall be not less than 300 mm nor more than 1 000 mm above the ground.

5.5.1.3 In length, the side reflex-reflecting device should be placed such that under normal conditions it will not be masked by the driver or passenger, or their clothing.

5.5.2 Orientation

The reference axis of the side reflex-reflecting devices shall be perpendicular to the vehicle's median longitudinal plane and directed outwards. It may move with the steering.

5.6 Pedal reflex-reflecting device

Pedal reflex-reflecting devices shall be fitted only to those pedals of the moped which, by means of cranks or similar devices, can be used to provide a means of propulsion alternative to the engine. They shall not be fitted to pedals which serve as controls for the moped or which serve only as footrests for the rider or passenger.

The outer faces of the illuminating surface of the reflex-reflecting devices shall be recessed into the body of the pedal.

The reflex-reflecting devices shall be mounted in the pedal body in such a way as to be clearly visible both to the front and to the rear of the moped. The reference axis of such reflex-reflecting devices, the shape of which shall be adapted to that of the pedal body, shall be perpendicular to the pedal axis.

5.7 Rear reflex-reflecting device

5.7.1 Position

5.7.1.1 In the case of a moped equipped with a rear reflex-reflecting device, its reference centre shall be in the median longitudinal plane of the vehicle.

5.7.1.2 In the case of a moped equipped with two rear reflex-reflecting devices, they shall be fitted in such a way that their reference centres are symmetrical in relation to the median longitudinal plane of the vehicle.

5.7.1.3 The height of a rear reflex-reflecting device shall be not less than 250 mm nor more than 900 mm above the ground.

5.7.2 Orientation

The rear reflex-reflecting device shall face rearward.

5.8 Direction indicator lamp

5.8.1 Position

5.8.1.1 In width, direction indicator lamps shall meet the requirements given in a) or b), as appropriate.

a) For front indicators, the following requirements shall all be met:

- 1) the separation distance between the two direction indicator lamps shall be at least 240 mm;
- 2) the indicators shall be situated outside the longitudinal vertical planes tangential to the outer edges of the illuminating surface of the passing/dipped-beam headlamp(s);
- 3) in accordance with Table 1, there shall be a minimum separation distance between the indicators and the closest passing/dipped-beam headlamp.

Table 1 — Minimum intensity of direction indicator lamp and corresponding minimum separation distance with the closest passing/dipped-beam headlamp

Minimum intensity of direction indicator cd	Minimum separation distance from headlamp mm
90	75
175	40
250	20
400	0

b) For rear indicators, the separation distance between the two direction indicator lamps shall be at least 160 mm.

5.8.1.2 The height of direction indicator lamps shall be not less than 350 mm nor more than 1 200 mm above the ground.

5.8.1.3 In length, the forward distance between the reference centre of the rear indicators and the transverse plane which constitutes the rearmost limit of the vehicle's overall length shall not exceed 300 mm.

5.8.2 Orientation

The front indicators may move with the steering.

5.9 Stop lamp

5.9.1 Position

5.9.1.1 The height of a stop lamp shall be not less than 250 mm nor more than 1 500 mm above the ground.

5.9.1.2 In length, the stop lamp shall be at the rear of the vehicle.

5.9.2 Orientation

The stop lamp shall face rearward.

5.10 Rear position lamp

5.10.1 Position

5.10.1.1 The height of a rear position lamp shall be not less than 250 mm nor more than 1 500 mm above the ground.

5.10.1.2 In length, the rear position lamp shall be at the rear of the vehicle.

5.10.2 Orientation

The stop lamp shall face rearward.

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